DOCUMENT RESUME

ED 162 656 IR 006 653

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TITLE The Oceans: New Frontier.
INSTITUTION INFORMEDIA, Pearl River, N.Y.
PUB DATE 78
NOTE 23p.
AVAILABLE FROM INFORMEDIA, Box 1020, Pearl River, New York 10965 ($2.50)
JOURNAL CIT Media Monitor: The Timely Guide to Learning Resources; v2 n1 Fall 1978

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Bibliographies; *Educational Resources; Elementary Education; Information Sources; *Instructional Materials; *Oceanology; Reference Materials; Secondary Education

ABSTRACT

This annotated guide to current marine education resources is arranged in three sections--secondary, elementary, and professional--and indexed by subject. It lists 287 selected free-loan films, sale films, audio and video recordings, film loops, filmstrips, study prints, maps, charts, and other software, including government publications, reference books, and curriculum guides. Source, release date, sale and rental price, format data, grade level, contents and references to reviews in professional journal are noted for each title. Addresses of 90 vendors are listed separately at the end. (Author/JEG)

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# THE OCEANS: NEW FRONTIER

Media Monitor
Vol. 2 No. 1, Fall 1978

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# MEDIA MONITOR

THE TIMELY GUIDE TO LEARNING RESOURCES


## The Oceans: New Frontier

Life on this planet originated in the sea. Mankind almost from its beginning has relied on the ocean for food and transportation. In our own time airways have partially superseded waterways, yet our dependence on the oceans may be even greater in the future. We look to them increasingly for food and other resources. The oceans, along with outer space, are our new frontier.

Knowledge of the oceans has expanded immensely in the past twenty years or so. It is now known that they contain, in their waters and under their floors, extensive mineral resources, possibly being replenished periodically from beneath the earth's crust. The science of plate tectonics tells us that the earth's continents once formed a contiguous solid mass and that continents are in continuing motion. Aquaculture is another relatively new science that aims at increasing food yields from the seas. There is even speculation as to whether humans could adapt to living underwater -- a possible solution to the crowding of the solid portions of the globe.

Several conferences have been convened under the auspices of the United Nations for the purpose of arriving at an International Law of the Sea Convention, to be ratified by various countries and enforced by domestic laws. Such efforts so far have have proved unsuccessful. Instead, nations have extended their own definitions of territorial waters, with 200 miles from the coast line now becoming standard.

Federal legislation in 1966 establishing sea grant colleges and other government support programs are in part responsible for the burgeoning of oceanography as a field of study. Offered at over 50 colleges and universities, marine education is also becoming a not uncommon subject in secondary schools.

Instructional media now on the market now on the market detail the present state of oceanographic knowledge for elementary and secondary school students. Many stress environmental awareness of marine habitats and the need for safe and sane use of the oceans. For students who live far from any coast and have never seen or heard the ocean, the filmic medium can provide a simulation of the experience.

This issue of MEDIA MONITOR is your guide to available marine education resources. It carefully describes 287 selected *current* filmstrips, slides, audio and video recordings, film loops, study prints, maps, charts, transparencies and other software for all grades and free-loan films and video cassettes from private and government sources. It supplies accurate, *objective* data, permitting you to make deliberate and informed choices. A detailed subject index helps you spot resources on desired topics.

As in other issues of MEDIA MONITOR, annotations provide notes on contents, exact physical descriptions, applicable grade levels, sources, prices and release dates where they can be ascertained, and recommendations by independent reviewers.

All visuals are in color unless otherwise

*(continued on page 20)*

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VOLUME 2, NUMBER 1 • FALL 1978

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# I. SECONDARY

## Audio Recordings

*[Purchase of cassettes from Center for Cassette Studies (CCS) and National Center for Audiotapes includes permission to duplicate.]*

1. BIO-ACOUSTICS AND SHARKS. 34 min. $14.95. Grades 5-12. CCS 13587.

   Underwater sounds are identified and differentiated on Side 1, while Side 2 points out that only one of over 200 species of sharks attacks without provocation and gives safety rules for swimming in shark waters.

2. EXPLORATION OF THE MID-ATLANTIC RIFT. AAAS Cassettes. 1976. $9. Grades 10-12. 76T287.

3. HURRICANES. 1971. 33 min. $14.95. Grades 5-12. CCS 13530.

   Origin and progress of hurricanes.

4. MINERAL WEALTH ON THE OCEAN FLOOR. 30 min. $12.95. Grades 7-12. CCS 27808.

   Resources contained in nodules and possibilities for mining them.

5. THE OCEAN DEPTHS: A NEW FRONTIER. National Center for Audiotapes. 13 cassettes. 15 min. each. $4.90 each. Grades 7-12

   Produced by Voice of America. Contents: Introduction: The Ocean World; Why an Ocean: The Ocean's History; The Science of Oceanography; Stations in the Sea; Digging under the Earth's Crust; The Ocean -- First Basin of Life; The Ocean and Our Weather; Food from the Sea: The Hunting Stage; Harvesting the Ocean: Aquaculture; Mining the Ocean Depths: Minerals from the Sea; Fresh Water from the Sea; International Cooperation; Conclusion: Sea, Space and Time.

6. OCEAN WAVES AND PROGRESSIVE OSCILLATORY WAVES. National Book Company. 2 cassettes. 4 lessons, syllabus. $34.60. Grades 11-12.

7. OIL FROM THE OCEANS: PREMISES AND PROSPECTS. AAAS Cassettes. 1976. 2 cassettes. $18. Grades 10-12.

8. THE ORIGIN OF CLIMATE. 1971. 35 min. $14.95. Grades 5-12. CCS 13532.

   The Gulf Stream and other factors in weather and climate formation.

9. QUESTION AND ANSWERS ABOUT OCEANS OF THE WORLD. National Book Company. 4 cassettes. 8 lessons, syllabus. $62.85. Grades 11-12.

10. THE SEA. National Center for Audiotapes. 40 min. $6.45. Grades 7-12.

    Survey of oceanography, prepared by Pennsylvania Department of Public Instruction.

11. THE SEA AND ITS RESOURCES. AAAS Audiotape Program. Reel or cassette. $19.95. Grades 10-12.

    Program from 1973 annual meeting of the American Association for the Advancement of Science.

12. THE SHIFTING OCEANS: A DISCUSSION OF THE UNDERSEA HISTORY OF THE PLANET. 1971. 35 min. $15.95. Grades 7-12. CCS 13646.

    Characteristics of land that was formerly under the sea and of the intertidal zone.

13. SOUNDS AND THE ULTRA-SOUNDS OF THE BOTTLE-NOSED DOLPHIN. Folkways. 1973. $7.98. Grades 7-12. 6132.

    Range of male and female dolphin sounds slowed to human frequency range.

14. SOUNDS OF SEA ANIMALS. Folkways. 1 disc. $7.98. Grades 7-12. 6125.

15. SOUNDS OF THE SEA. Folkways. 1 disc. $7.98. Grades 5-12. 6121.

16. STUDYING THE OCEANS. Center for Cassette Studies. 27 min. $14.95. Grades 7-12. CBC1029.

    Introduction to oceanography, prepared by the Canadian Broadcasting Corporation.

17. THOR HEYERDAHL "THE SEAS". Center for Cassette Studies. 30 min. $14.95. Grades 7-12. CBC895.

    The noted explorer describes the ocean pollution he encountered on his travels by raft and warns that the oceans' ability to absorb refuse is limited. Canadian Broadcasting Corporation production.

## Film Loops

18. BEHAVIOR OF UNDERSEA ANIMALS. Ward's. 7 loops. $28 each.

    Contents: Schooling Behavior of Fishes; Curious Behavior of Fishes; Locomotion in Fishes; Locomotion in Invertebrates; Territoriality of Reef Animals; Octopus Behavior; Camouflage.

19. COASTAL PROCESSES. McGraw-Hill. 1972. 4 min. $24.50. Recommended by *Previews* 2/73.

20. CONCH FISHING IN THE CORAL SEA. Prentice-Hall. $28.

21. THE CORAL REEF ENVIRONMENT. Prentice-Hall. 8 loops. $28 each.

    Contents: The Coral Reef Environment; The Coral Reef at Night; Fishes of the Coral Reef (2 loops); Crabs of the Coral Reef; Shrimps of the Coral Reef; Molluscs of the Coral Reef; Urchins of the Coral Reef.

22. CRUSTAL EVOLUTION. McGraw-Hill. 1972. 4 min. $24.50. Recommended by *Previews* 2/73.

23. DEEP OCEAN SEDIMENTS. McGraw-Hill. 1972. $24.50. Recommended by *Previews* 2/73.

24. HOW ANIMALS MOVE UNDERWATER. BFA. 1964. 2 loops. 4-5 min. $24.95 each.

25. LANDFORMS PRODUCED BY COASTAL DEPOSITION. Turtox. $26.95.

26. LANDFORMS PRODUCED BY WAVE EROSION. Turtox. $26.95.

27. MARINE ENVIRONMENTS. Prentice-Hall. 1970. 6 loops. 4 min. each. $28 each.

Contents: The Rocky Coast Environment: High Tide Zone; The Rocky Coast Environment: Mid Tide Zone; The Rocky Coast Environment: Low Tide Zone; The Sandy Beach Environment; The Mud Flat Environment; Identification of Marine Organisms.

28. MARINE ORGANISMS. Ward's. 1969. 20 loops. 3 min. each. $28 each.

Contents: Sponges; Obelia; Sea Anemone; Chitons; Limpets; Mussel; Nudibranchs; Sea Hare; Octopus; Nereis; Hairy-Gilled Worm; Barnacle; Hermit Crab; Shore Crab; Starfishes; Sunflower Star; Brittle Star; Sea Cucumber; Sea Urchin; Sand Dollar.

29. OCEAN BASIN TOPOGRAPHY. McGraw-Hill. 1972. $24.50. Recommended by *Previews* 2/73.

30. OCEAN CURRENTS. McGraw-Hill. 1972. $24.50. Recommended by *Previews*

31. OCEANOGRAPHY. Ward's. 1974. 6 loops. $150. $26.95 each.

Filmed in part at Woods Hole Oceanographic Institute. Contents: Ocean Salinity; Ocean Temperatures; Ocean Circulation: Surface; Ocean Circulation: Depth; Ocean Waves; Ocean Tides.

32. PLANKTON: THE LIVING SEA. BFA. 1969. 6 loops. 4 min. each. $149.70. $24.95 each.

Contents: Collecting Plankton; Plankton: Diversity; Plankton: Mobility; Plankton: Food Webs and Feeding Relationships

33. THE SARGASSUM WEED COMMUNITY. Prentice-Hall. $28.

THE UNDERSEA WORLD OF JACQUES COUSTEAU (193)

34. WATER ECOSYSTEMS. Ward's. 1969. 3 loops. 4 min. each. $27 each.

Contents: Rocky Coast: Tide Pool; Rocky Coast: Wave Shock; Sandy Beach Community.

## Free-Loan Films

*[Includes films from Australian Information Service, which charges a nominal fee.* ESTUARY: THE EDGE OF LIFE (114) *is a free-loan photographic exhibit,* SEA GRANT '70s (257) *a free periodical.]*

35. ASSAULT ON THE UNKNOWN: OCEANOGRAPHIC RESEARCH PLATFORM. U.S. Navy. 1972. 29 min. $168.25 (for sale by National Audiovisual Center).

36. THE BIOLOGIST AND THE BOY. National Oceanic and Atmospheric Administration. 14 min.

Adaptation of ESTUARINE HERITAGE (48).

37. BIOLUMINESCENCE: LIGHT IN THE SEA. U.S. Navy. 1977. 22 min.

Research by Navy and private institutions.

38. BREAKTHROUGH. U.S. Office of Water Research and Technology. 1972. 22 min.

Reverse osmosis process in desalting water.

39. BUT FOR HOW LONG. U.S. Navy. 1974. 27 min. $156.50 (NAC).

Control of pollution from sewage and oil spills by the Navy.

40. CALIFORNIA GRAY WHALE. National Park Service. 1975. 22 min. Rental from Harpers Ferry Historical Association. $140 (NAC).

Documentation of one of largest mammals and its migration.

41. CHARTING THE OCEANS. U.S. Navy. 1972. 28 min. $162.50 (NAC).

Production and use of nautical charts.

42. THE COMMON SEA. U.S. Navy. 1974. 26 min. $114 (NAC). Recommended by Educational Film Library Association.

International law governs those using the high seas.

43. CORAL KINGDOM. Australian Information Service. 1950. 7 min. $77/$2.50.

Excerpts from CORAL WONDERLAND (44).

44. CORAL WONDERLAND. Australian Information Service. 1950. 30 min. $330/$7.50.

Coral formations and marine life of the Great Barrier Reef.

45. THE DAY THE TIDE TURNED RED. U.S. Navy. 1975. 27 min. $156.50 (NAC). Recommended by Educational Film Library Association.

The "red tide" is toxic to humans and marine life.

46. DIVING FOR SCIENCE. U.S. Navy. 1973. 28 min. $162.50 (NAC).

Techniques of shallow water diving.

EAGLE 76 (197)

47. EDGE OF DISCOVERY. U.S. Navy. 1975. 28 min. $162.50 (NAC).

Efforts to prevent fouling by barnacles and other marine animals.

48. ESTUARINE HERITAGE. NOAA. 1969. 28 min.

Importance of estuaries to seafood production; threats posed by pollution, dredging, pesticides.

49. EXPLORATION OF THE DEEP OCEAN BOTTOM: THE CAYMAN TROUGH. U.S. Navy. 1978. 27 min.

Volcanic activity in the oceans.

50. THE GATHERING FLAME. Australian Information Service. 1972. 21 min. $231/$5.

Navigational aids to help ships avoid dangers off shore.

51. GREAT BARRIER REEF. Australian Information Service. 1975. 26 min. $286/$7.50.

Fish, coral and other forms of marine life, including turtles.

52. GULF STREAM. U.S. Navy. 1971. 28 min. $162.50 (NAC).

53. HURRICANE BELOW. National Aeronautics and Space Administration. 1974. 14 min. $64.50 (NAC).

Commercial fishing vessel caught in path of hurricane escapes it by use of modern technology, including monitoring by weather satellites.

54. ISLAND OF TURTLES. Australian Information Service. 1950. 7 min. $77/$2.50.

Excerpts from CORAL WONDERLAND (44) showing seasonal return of turtles to lay eggs.

55. KEY TO INNERSPACE. U.S. Navy. 1975. 19 min. $145 (NAC).

Contributions of Skylab 4 to oceanography.

56. MARVELS IN MINIATURE. Australian Information Service. 1950. 15 min. $165/$3.75.

Microscope photography of planktons, diatoms and coral building organisms.

57. MEDICINE FROM THE SEA. U.S. Navy. 1977. 28 min.

Study of marine life leads to development of new drugs.

58. NEXT PLATEAU. U.S. Office of Water Research and Technology. 1972. 26 min.

Distillation processes in desalinization.

59. OCEAN DESERT. U.S. Navy. 1971. 29 min. $168.25 (NAC).

Sargasso Sea.

OPSAIL 76 (198)

60. PLANKTON -- LIFE OF THE SEA. U.S. Navy. 1972. 25 min. $145 (NAC). Several awards.

New discoveries about plankton.

61. RETURN TO THE SEA. U.S. Navy. 1976. 29 min. Grades 10-12. Recommended by *Science Books and Films* 9/77*.

History of deep-sea submersibles, showing footage of the deep-sea scattering layer, underwater volcanic eruptions and deep water organisms.

62. THE SEA AND THE JAPANESE. Association Films. 20 min.

Japan's advances in sea farming, desalinization, exploration of oil and mineral resources depicted in a production from the Japan Trade Center.

63. SEA AREA FORTIES. Modern Talking Picture Service. 1975. 29 min. $285. Grades 7-12. Recommended by *Science Books and Films* 5/77*, award at American Film Festival.

British Petroleum Company-sponsored documentary. Construction and placement of an offshore oil platform off Scotland in the North Sea, laying of pipeline across ocean floor and land to refinery.

64. SEARCH FOR THE WHALE. U.S. Navy. 1976. 20 min. $116 (NAC). Grades 7-12. "Acceptable", *Science Books and Films* 9/77.

Useful for photographs of five types of whales and recordings of whale sounds. Emphasis on use of sonar to detect whales.

65. SHARKS: DANGER IN THE SEA. U.S. Navy. 1973. 27 min. Several awards.

Shark protection techniques based on Navy studies.

66. SIX HEAVY FISH AND A TON OF SINKERS. Australian Information Service. 1972. 16 min. $176/$5.

Retrieval of cannon from Captain Cook's voyage from Great Barrier Reef.

67. SOUNDS IN THE SEA. U.S. Navy. 1970. 28 min.

68. TSUNAMI. NOAA. 28 min.

Waves caused by seismic disturbances.

69. UNDERSEA OASIS. Shell Oil Film Library. 1972. 29 min. Grades 10-12. Recommended by *Science Books and Films* 5/78*.

Sunken ships, car bodies and other man-made objects form artificial reefs and provide homes for marine organisms.

70. WINDOW TO THE ARCTIC. U.S. Navy. 1977. 25 min.

Arctic research by Navy and private institutions.

## FILMS

*[OCEANS: OUR CONTINUING FRONTIER (254) may be used to supplement the listing below.]*

71. BAYMEN -- OUR WATERS ARE DYING. Anne Belle. 1976. 29 min. $375/$40. Grades 9-12. Recommended by *Science Books and Films* 3/78, *Booklist* 5/1/77, award at American Film Festival.

The harvesting of clams and shellfish from bays of Long Island, New York, is a trade passed down from father to son. Baymen make up a close-knit community that takes pride in its hard physical labor in all kinds of weather. Now dredging and filling and resulting pollution threaten their way of life.

72. DOWN TO THE SEA. Centron Educational Films. 1975. 30 min. $445/$44.50. Grades 10-12. Recommended by *Science Books and Films* 12/76*, Educational Film Library Association.

Application of oceanography to commercial fishing, involving advanced scientific equipment.

73. DROP BY DROP TO THE SEA. Q-Ed. 1974. 22 min. Teacher's guide. $275. Recommended by Educational Film Library Association, *Films News* 9-10/75, CINE Golden Eagle award.

"An excellent general awareness film" (EFLA) making the point that oceans are an essential link in the earth's water cycle, the source of life and fresh water, of oxygen and provide the base for the food chain. The dangers posed by pollution.

74. FIRE UNDER THE SEA: THE ORIGIN OF PILLOW LAVA. Moonlight. 1974. 20 min. $270. Grades 9-

12. Recommended by *Science Teacher* 4/75, Educational Film Library Association. Rental from University of California, $21.

First photographic documentation of underwater lava flow from Hawaiian volcano.

75. FISH: MASTER OF MOVEMENT. Macmillan. 1969. 12 min. $190/$15. Grades 10-12. CINE Golden Eagle; award at American Film Festival. $8.50 rental from Syracuse.

76. FOOD FROM THE SEA. Macmillan. 1972. 16 min. $220/$17.50. (Endless Sea series.) $15 rental from Association Films. Recommended by Educational Film Library Association.

Fishing methods and oyster farms. Fish protein concentrate can be made from fish otherwise not used for food and be used as a food additive.

77. AN ISLAND IN TIME -- THE POINT REYES PENINSULA. Sierra Club. 1969. 28 min. $7.50 rental from Association Films.

Point Reyes in California is the first national seashore to be added to the national park system.

MARSHLAND IS NOT WASTELAND (199)

78. OCEANS: LIVING IN LIQUID AIR. Document Associates. 1971. 22 min. $285. Rental from Pennsylvania State University, $14; from Syracuse University, $30. Grades 7-12. (Towards the Year 2000 series.)

Futuristic speculation about possibility of human life under water.

79. OCEANS: THE SILENT CRISIS. Xerox. 1972. 24 min. Teacher's guide. $320. Recommended by *Media and Methods* 12/75, Educational Film Library Association.

Industrial wastes dumped into the Mississippi and carried into the ocean harm everyone's health.

80. OFFSHORE. NFBC. 1973. 20 min. $265/$30. $205 (video). Grades 5-12. Recommended by Educational Film Library Association.

Life on an oil drilling rig.

81. OIL SPILL! PATTERNS IN POLLUTION. Sierra Club. 1972. 17 min. CINE Golden Eagle award. $7.50 rental from Association Films.

82. THE PRIVATE LIFE OF THE HERRING GULL. Time-Life. 1975. 26 min. $275/$30. Grades 10-12. Recommended by *Science Books and Films* 3/77*, *Booklist* 6/15/75, *Landers* 9-10/75.

Year-long study of gulls' lifecycle and survival. Garbage dumps provide constant food supply and result in survival of larger numbers of gulls through the winter.

83. THE RIGHT WHALE: AN ENDANGERED SPECIES. National Geographic. 1976. 23 min. $310 (also in video). Grades 7-12. Award at American Film Festival.

Study of one of the rare species of great whales.

84. SAGA OF THE SEA OTTER. Pictura. 1976. 26 min. $350/$40. Grades 7-12. Recommended by *Science Books and Films* 3/77**, *Media and Methods* 12/75, award at American Film Festival.

Sea otters were one of the first species to be protected but are still endangered due to certain practices used in fishing for abalone off the California coast.

85. THE SALT MARSH: A QUESTION OF VALUES. EBEC. 1975. 22 min. $290. Rental from Pennsylvania State University, $14; from University of California, $22. Grades 9-12. Recommended by *Booklist* 9/1/75, *Previews* 12/75.

The salt marsh is a highly productive ecosystem, important to our food supply as the home of marsh grasses, fish and migratory birds.

SEA TURTLES (201)

86. SEALS. Association Films. $5 rental. 12 min.

Film produced by Friends of Animals and narrated by Arthur Godfrey questions the necessity of the annual seal kill to obtain furs.

SEASHORE (202)

87. SHARKS: TERROR, TRUTH, DEATH. Films, Inc. 1976. 25 min. $375/$26. Grades 10-12. *Science Books and Films* 3/77*, recommended by Educational Film Library Association, *Landers* 1-2/77.

Realistic treatment of sharks, pointing out that more people die from insect stings than from shark attacks.

88. SHIPPING. Paramount. 1974. 16 min. $270/$30. Grades 4-12. Recommended by Educational Film Library Association, *Previews* 3/75.

History and development of the U.S. merchant marine.

89. SIX FATHOMS DEEP. Great Plains National Instructional Television Library. 1973. 30 min. $360/$20. $225/$25 (video). Grades 7-12. (Man Builds -- Man Destroys series).

Can oil spills be prevented?

90. SUB-IGLOO. International Film Bureau. 1975. 20 min. $250/$15. Grades 7-12. Recommended by Educational Film Library Association, *Previews* 12/75, *Booklist* 4/15/75.

A National Film Board of Canada production documenting underwater exploration in the Arctic Ocean found to be rich in living organisms. Sequel to 28° ABOVE -- BELOW (10 min.), an earlier release from the same producer and distributor.

WAVES (203)

WHALES (204)

WHALES: CAN THEY BE SAVED? (205)

## FILMSTRIPS

91. APE, MAN AND WHALE: INTELLIGENCE AND LANGUAGE. 4 filmstrips, 4 cassettes or records. 74-91 frames, 12-14 min. each. Teacher's guide. Audio Visual Narrative Arts. 1977. $95; $103 (with cassettes); $218 (sound slide set). Grades 9-12. Recommended by *Previews* 2/78, 4/78.

One of component parts explores possibility of communication between humans and dolphins, porpoises and whales and describes recent experiments.

92. ATOLLS. Imperial Educational. 1967. 1 filmstrip and cassette. $17.50. (In Earth Science III series.)

Coral reef formation and development of islands.

93. CAREERS IN MARINE INDUSTRIES AND SCIENCE. Pathescope. 1978. 2 filmstrips and cassettes. Approximately 80 frames. 30 min. each. $50.

94. CONTINENTAL DRIFT. Ward's. 1974. 2 filmstrips, 60-63 frames. $29 each. (Solo-Learn series.)

Contents: A Theory Is Born; Sea Floor Spreading.

DIVING THE GREAT BARRIER REEF (207)

THE DRIFTING CONTINENTS (208)

ECOLOGY AT WORK: A STUDY OF THE SEA OTTER (209)

95. ECOLOGY OF CORAL REEFS. Ward's. 1975. 1 filmstrip and cassette. 68 frames. $22.

96. ECOLOGY OF MUD FLATS. Ward's. 1976. 1 filmstrip and cassette. $22.

97. ECOLOGY OF SANDY BEACHES. Ward's. 1975. 1 filmstrip and cassette. 47 frames. $22.

98. ECOLOGY OF THE ROCKY COASTS. Ward's. 1975. 1 filmstrip and cassette. 82 frames. $22.

EXPLORING THE OCEAN (210)

EXPLORING UNDER THE SEA (211)

99. INTRODUCTORY OCEANOGRAPHY. Clearvue. 1976. 6 filmstrips, 6 cassettes or records. 52 frames, 10 min. each. $81.50 ($15.95 each set). Grades 4-12.

Contents: The Science of Oceanography; The Oceanographer's Tools; Topography of the Ocean Floor; Ocean Weather; Biological Oceanography; Marine Resources and Environmental Concerns.

LIFE CYCLES OF COMMON ANIMALS: GROUP I (212)

LIFE CYCLES OF COMMON ANIMALS: GROUP IV (213)

100. LIFE IN THE SEA. BFA. 1977. 4 filmstrips, 4 cassettes or records. 46-63 frames, 9 min. each. Teacher's guide. $68. Grades 6-9. Recommended by *Previews* 2/78, 4/78.

Cousteau production. Contents: Plants and Simple Sea Animals; Sea Animals without Backbones; Armored and Spiny-Skinned Sea Animals; Sea Animals with Backbones.

101. LIFE OF THE FISHES. Film Forum. 1975. 6 filmstrips, 6 cassettes. Teacher's guide. 92-122 frames, 13 min. each. $110. Grades 6-12. Recommended by *Previews* 4/76, *Booklist* 5/15/75, *Media and Methods* 4/75.

Cousteau production. Contents: The Shaping of Life; Range of Life; Two Undersea Eco-Systems; Survival; Roots of Intelligence; Fragile Balance.

MARINE BIOMES (215)

102. MARINE PLANKTON. Ward's. 1975. 1 filmstrip and cassette. 40 frames. $22.

103. THE MOVING EARTH: NEW THEORIES OF PLATE TECTONICS. Educational Dimensions Group. 1977. 2 filmstrips, 2 cassettes. Teacher's guide. $39.

New test results, mapping techniques, theories of volcanic activity.

104. OCEAN CURRENTS. Prentice-Hall. 2 filmstrips, 2 cassettes or records. Resource manual. $50. (Captioned $20.)

Location and paths of major ocean currents, and factors influencing currents, including temperature, tides, salinity, latitude, wind, ocean topography, land topography.

OCEAN LIFE (218)

THE OCEANS (221)

105. THE OCEANS AND THEIR EFFECTS. Eyegate. 1974. 1 filmstrip ($10), 1 cassette ($7). 62 frames. (In Concepts in Science series, Set IX.) Grades 7-12.

106. PLATE TECTONICS. Educational Dimensions Group. 1975. 2 filmstrips, 2 cassettes. 78-80 frames, 18-20 min. each. Teacher's guide. $49. Grades 9-12. Recommended by *Previews* 11/76, *Booklist* 4/1/77.

Theory that earth's surface is made up of several huge plates in motion accounts for movement of continents, climate, volcanoes, earthquakes, folding of mountain ranges. "For the high school student, some reorganization of slides will be necessary and a good deal of information will have to be supplied" (*Booklist* 4/1/77).

107. RESOURCES OF THE OCEAN. Ward's. 1974. 1 filmstrip and cassette. $29. (Solo-Learn series.)

Food resources in ocean waters and mineral resources under continental shelves and on the ocean floor. Potentials for desalinization.

108. SALMON: BIOLOGY AND LIFE HISTORY. Outdoor Pictures. 1 filmstrip and cassette. 51 frames, 13 minutes. $17.50; $29.50 (slides).

SALTWATER COMMUNITIES (223)

109. SAND DUNE SUCCESSION. Imperial Educational. 1975. 2 filmstrips, 2 cassettes or records. 48-54 frames each. $30 ($33 with cassettes), $16 each ($17.50 with cassette). Grades 7-12. Recommended by *Booklist* 11/15/75.

Plant succession. Contents: From Beach to Pine Forest; From Pine Forest to Beech-Maple.

SEASIDE (226)

SHARKS (227)

110. THIS RESTLESS EARTH: A STUDY OF VOLCANOES AND CONTINENTAL DRIFT. Prentice-Hall. 1974. 4 filmstripes, 4 cassettes or records. Teacher's guide. Approximately 72 frames, 9 min. each. $98. Grades 7-12. Recommended by *Previews* 3/76, 4/77, *Booklist* 7/1/75.

Sequential treatment deducing theory of continental drift from volcanic and other crustal disturbances

in Iceland and elsewhere. Contents: Iceland: A Volcano Erupts; Iceland: Geologic Activity; Continental Drift: Evidence; Continental Drift: Theory.

UNDERSEA EXPLORATION (230)

111. THE UNDERWATER ENVIRONMENT, GROUP I. Imperial Educational. 1970. 4 filmstrips, 4 cassettes or records. $56 ($62 with cassettes); $16 each ($17.50 with cassette). Grades 5-12.

Life forms in temperate and sub-tropical waters of North America. Contents: Living Corals; Spiny-Skinned Animals; Fish in Their Environment; Shellfish and Tubeworms.

112. THE UNDERWATER ENVIRONMENT, GROUP II. Imperial Educational. 1971. 2 filmstrips, 2 cassettes or records. $30 ($33 with cassettes); $16 each ($17.50 with cassette). Grades 5-12.

Contents: Marine Vegetation -- Part I (role in food chain and oxygen cycle); Marine Vegetation -- Part II (algae).

## Charts, Study Prints, Photographs, Etc.

*[Turtox sells a large number of black and white 17x22" charts depicting marine organisms ($1.65 each), also black and white 30x40" wall charts ($11.50 each) and color 30x40" charts ($15 and up) for a more limited range of subjects. Government charts of marine fishes (115 to 118 below) may also be obtained from this supplier at a small mark-up.]*

113. COMPARATIVE ADAPTIVE FEATURES OF MARINE ANIMALS. Ward's. 38x50". $18.95.

Functional and phylogenetic relationships of major taxonomic groups.

114. ESTUARY: THE EDGE OF LIFE. Sierra Club. 10 color prints 16x20" mounted on 4x6' exhibit panels. Free-loan.

115. MARINE FISHES OF THE CALIFORNIA CURRENT AND ADJACENT WATERS. Superintendent of Documents. 1972. 48x30" $2.80. S/N 003-020-00055-0.

116. MARINE FISHES OF THE GULF AND SOUTH ATLANTIC. Superintendent of Documents. 1972. 48x30". $2.30. S/N 003-020-00065-7.

117. MARINE FISHES OF THE NORTH ATLANTIC. Superintendent of Documents. 1972. 48x30". $2.80. S/N 003-020-00027-4.

118. MARINE FISHES OF THE NORTH PACIFIC. Superintendent of Documents. 1972. 48x30". $2.30. S/N 003-020-00051-7.

119. OCEANOGRAPHY. Ward's. 7 sets of 6 prints each. $55.65. 13x18". $7.95 each. Grades 4-8.

Contents: Life in the Sea (2 sets); Tools of Oceanography; Topography of the Sea Floor; Sediments of the Sea Floor; Ocean Meteorology; The Sea.

120. OCEANOGRAPHY: VIEW FROM SPACE. Encyclopedia Britannica Educational Corporation. 1977. 8 color prints. 13x18". Teacher's guide. $1950. Grades 7-12.

Photographs from NASA space missions with text. Contents: Earth: A Water Planet; Shoreline Processes; River Mouths; The Mississippi River Delta; Coastlines of North America; Tongue of the Ocean; Ocean Spreading and the Red Sea; Coral Reefs and Atolls.

## Maps, Globes, Nautical Charts

*[All U.S. National Ocean Survey charts and maps are frequently revised and are shown on free index maps, also frequently revised (several are included in* OCEANOGRAPHY PACKET (277)*).]*

121. BATHYMETRIC MAP. Ward's. 38x50". Color. $23.

Erasable surface map mounted on rod and hanger. Contours of ocean floor, ocean depths and other features.

122. BATHYMETRIC MAPS. U.S. National Ocean Survey Distribution Division. $2 each. (Free index map.) Scale varies. Map and chart catalogs.

Topographic maps of the sea floor, including Outer Continental Shelf Resource Management maps, covering all U.S. coastal areas.

123. EARTH PROFILE GLOBE. Cram. 12" diameter. $25.

Topography of land and ocean floors.

124. GEOPHYSICAL MAPS. U.S. National Ocean Survey Distribution Division. 1:1,000,000 and 1:250,000. $2 each. (Free index map.) Map and chart catalogs.

Bathymetric maps plus overlay maps for continental shelf and slope and deep-sea areas.

125. HYDROGRAPHIC RELIEF GLOBE. Ward's. 12" diameter in cradle base. Guide. $49.50.

Erasable surface. Topography of land and ocean areas.

126. NAUTICAL CHARTS. Canada Department of the Environment.

127. NAUTICAL CHARTS. U.S. National Ocean Survey Distribution Division. Scale varies. $3.25 each.

Data needed for safe navigation. Free index maps: Atlantic and Gulf Coasts; Pacific Coast and Hawaii; Alaska.

128. OCEAN FEATURES MAP. Turtox. 18x24". Color. $24.

Relief map of North Atlantic ocean.

129. OCEANOGRAPHIC GLOBE. Turtox. 12" diameter. $40.

Illuminated.

130. OFFSHORE MINERAL LEASING AREA MAPS. U.S. National Ocean Survey Distribution Division. Scale varies. $3.25 each. (Free index map.) Map and chart catalog.

5 standard nautical charts overprinted with mineral leasing data covering Gulf of Mexico.

131. PHYSIOGRAPHIC CHART OF THE SEA FLOOR. Turtox. Pad of 100 11x17". $5.50.

Major physiographic features of ocean floors.

132. STORM EVACUATION MAPS. U.S. National Ocean Survey Distribution Division. 1:62,500. $2 each. (Free index map.) Map and chart catalog.

Show areas along Atlantic and Gulf coasts that would be inundated by various levels of hurricane-caussed flooding and evacuation routes.

133. TIDAL CURRENT CHARTS. U.S. National Ocean Survey Distribution Division. $3 each. (Free index map.) Map and chart catalog.

Direction and velocity of the tidal current for each hour of the tidal cycle is indicated for each of 11 major U.S. ports. To be used with annual tide and current tables.

134. UNITED STATES AND ADJACENT CONTINENTAL SHELF. U.S. National Ocean Survey Distribution Division. 1974. 29x43". $2. 1:5,000,000.

Outline map.

135. WORLD OCEAN GLOBE. Turtox. 12". $21.95.

## SLIDES

*[Numerous slides on marine biological topics are available from Turtox, generally at approximately $1 per slide.]*

APE, MAN AND WHALE (91)

136. THE ATLANTIC REEF CORALS. Ward's. 69 slides. Script. $69.

Corals of the East Coast, Bahamas and Caribbean.

137. BIRDS OF SALT WATER ENVIRONMENTS. SVE. 20 slides. $14.

138. CORAL ATOLLS. Science Software Systems. 50 slides. $59.40.

Plant and animal life.

139. THE CORAL REEF. Ward's. 77 slides. Script. $77.

140. THE EARTH'S CRUST. Harcourt Brace. 1970. 40 slides in carousel. $60.

141. THE EARTH'S OCEANS. Harcourt Brace. 1970. 40 slides in carousel. $60.

142. EROSION: BEACHES AND WAVES. Educational Dimensions Group. 1976. 20 slides. Teacher's guide. $25.

143. EXPLORING THE CORAL REEF. Ward's. 110 slides. Script. $110.

66 slides from THE CORAL REEF (139) plus 44 additional ones depicting organisms found on reef.

144. FOCUS ON THE SEA -- THE CHAIN OF LIFE. Ward's. 83 slides. Script. $83.

31 slides from EXPLORING THE CORAL REEF (143) plus 62 additional ones depicting fishes of the reef.

145. MARINE ANIMALS OF THE PACIFIC COAST. Ward's. 169 slides. Script. $169.

Abridged set of 50 slides ($50) also available.

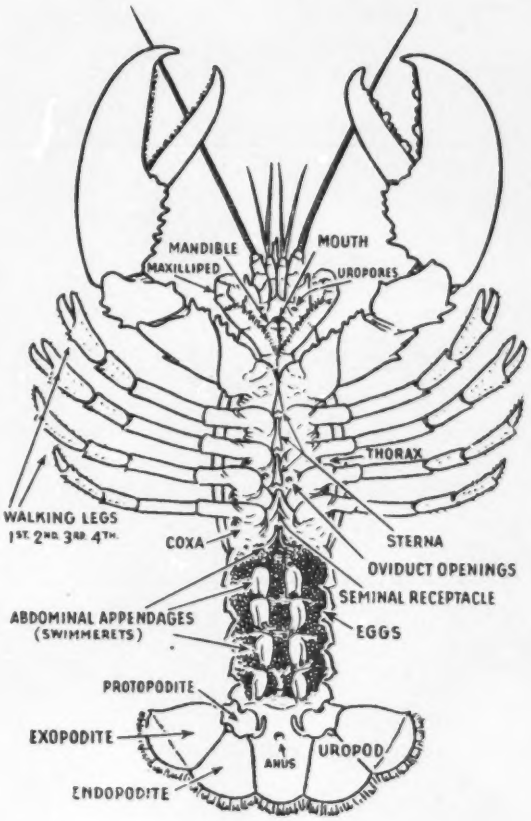


Diagram of lobster's anatomy (bottom view)

146. MARINE BIOLOGY. Harper & Row. 1972. 100 slides. Text. $90.

Ecology of the deep sea, rocky coast, estuaries, tropical seas, etc.

147. THE MARINE HABITAT. Science Software Systems. 10 slides. $13.95.

148. MARINE MAMMALS. Science Software Systems. 10 slides. $13.95.

149. MARINE ORGANISMS OF THE PACIFIC. Science Software Systems. 50 slides. $59.40.

150. MARINE PLANKTON. Science Software Systems. 15 slides. $19.10

150a. PACIFIC ISLAND BIOLOGY. Science Software Systems. 40 slides. $42.50.

Land, sea and underwater habitats.

151. PLATE TECTONICS. Educational Dimensions Group. 1976. 20 slides. Teacher's guide. $25. Recommended by *Booklist* 4/77.

SALMON: BIOLOGY AND LIFE HISTORY (108)

152. SALT MARSH ESTUARY. Lansford. 1972. 20 slides. Script. $71.95. Grades 7-12.

Life forms of the estuarine ecosystem.

153. SEA URCHIN DEVELOPMENT. Science Software Systems. 10 slides. $12.90.

154. THE SEASHORE. Lansford. 1972. 20 slides. Script. $71.95. Grades 7-12.

Life forms of coastal ecosystems.

SEASHORE INHABITANTS (240)

155. SHARKS. Science Software Systems. 20 slides. $35.95.

156. STARFISH DEVELOPMENT. Science Software Systems. 10 slides. $12.90.

157. THE TIDES. Science Software Systems. 20 slides. $26.95.

Biological impact of earth's tides.

158. UNDERSTANDING NATURAL ENVIRONMENTS: THE SEASHORE. Center for Humanities. 1977. 160 slides in cartridges. 2 cassettes or records. Teacher's guide. $139.50.

Intertidal, tidepool and other coastal habitats.

## TRANSPARENCIES

*[Includes transparency masters.]*

159. CORAL REEFS. 3M. Transparency master. $2.75 (minimum order, 5 titles).

160. CRUSTAL MOVEMENTS. Eyegate. 1967. 3 transparencies. 10x10". $7.75 each.

FISH -- ANIMALS WITH BACKBONES (241)

161. INTRODUCTION TO OCEANOGRAPHY. Cram. 20 transparencies, 24 duplicating masters, 1 cassette. Teacher's guide. $139.50.

Contents: Ocean Winds and Currents ($8.70); Introduction to Ocean Floor ($4.65); The Ocean Floor Silhouette ($6.55); Characteristics of Ocean Floor and Terminology ($6.55); Ocean Mountains ($5.80); Mountains -- Land and Ocean ($5.80); Island Formation ($5.80); Tides ($15.90); Wave Motion ($4.65); Deep Ocean Currents ($4.65); Iceberg -- Glacier Formation ($5.80); Comparative Size of Icebergs ($3.80); Iceberg Flow ($5.80); The Effects of Sediment -- Turbidity ($6.55); Salinity and Density ($5.80); Man's Exploration of the Ocean ($4.65); Vehicles of Exploration ($4.65); Mineral Wealth and Economic Usage ($5.80); Fishing ($4.65); Life in the Sea ($5.80).

162. LIFE IN THE OPEN SEA. 3M. Transparency master. $2.75 (minimum order, 5 titles).

163. OCEANOGRAPHIC INSTRUMENTS. 3M. Transparency master. $2.75 (minimum order, 5 titles).

164. OCEANOGRAPHY. Ward's. 19 transparencies. $83.

Contents: Ocean Belts of High and Low Salinity; Idealized System of Surface Ocean Currents; The Ekman Spiral; Orbital Motion in Waves; Wind Waves; Seascarps and Seamounts of the Northeastern Pacific Ocean; Island Arcs, Trenches, and Volcanoes of the Western Pacific; Profiles across the Atlantic Ocean Basin; Breaking Waves; The Mindanao Trench; Rip Currents and Longshore Currents; Antarctic Sea Ice; Crustal Structure of Continents and Ocean Basins; Continental Shelf and Slope with Submarine Canyons; Major Divisions of the North Atlantic Ocean Basin; The Mid-Ocean Ridge System; Distribution of Earth's Solid Surface Area; Structure Beneath the Continental Shelf; Convection Currents in the Mantle.

165. OCEANOGRAPHY. Sargent-Welch. 13 transparencies. $79.95.

Contents: Divisions of the Ocean; Submarine Geology; Island and Coral Reef Formation; Seashore Life: Sandy Shores; Seashore Life: Temperate Marshy Shores; Seashore Life: Cold Rocky Shores; Animals of the Open Ocean; Animals of the Deep; Plankton; Man in the Ocean; Tools of the Oceanographer; The Food Web; The Ocean Currents.

166. OCEANOGRAPHY I. Sargent-Welch. 4 transparencies. $25.25.

Contents: Ocean Currents; Earthquake Zones and Volcanoes; Oceanographic Features; Coral Reef.

167. OCEANOGRAPHY II. Sargent-Welch. 18 transparencies. $84.

Contents: Waves -- Deep Water; Waves -- Shallow Water; Internal Waves; Seismic Sea Waves; Rip Currents; Turbidity Currents; Echo Sounding; Uprolling; Guyots; Temperature in the Sea; Submarine Canyons; Water Masses; Magnetism of the Sea Floor; Oceania Ridge-Rise System; Life in the Sea; Fracture Zones; Beaches and Beach Cycles; Salinity in the Sea.

168. OCEANOGRAPHY. Milliken. 1968. 12 transparencies, 4 duplicating masters. Teacher's guide. $6.95.

Contents: Oceans and Seas of the World; Ocean Currents; Ocean Profile; Waves; Characteristics of

Ocean Water; Plant Life of the Oceans; Animal Life of the Ocean (Shallow and Deep Water); Underwater Exploration -- Bathyscaphe and Scuba; Tools of Oceanography; What the Ocean Provides.

169. SEA/LAND CONFIGURATION. Eyegate. 1967. 10x10". $5.50.

170. WORK OF WAVES AND WIND. Ward's. 1964. 12 transparencies. $52.

Contents: Wave Refraction; Development of Sea Cliffs; Evolution of Ria Coast (Shoreline of Submergence); Transport of Sand along the Shore by Short-Drifting; Sand Bars, Tombolos, and Cuspate Forelands; Barrier Islands and Barrier Beaches; Coral Reefs; Varieties of Shorelines; Transport of Sand by Wind; Barchan Dunes; Coastal Blowout Dunes; Landform of Loess.

## Free-Loan Video Recordings

171. LAND OF THE SEA. Modern Video Center. 29 min.

The oceans' resource potential. Sponsored by ALCOA.

172. OFF SHORE -- THE SEARCH FOR OIL AND GAS. Modern Video Center. 18 min. Grades 7-12.

Sponsored by Exxon.

173. P.O.G.O. -- PENNZOIL OFFSHORE GAS OPERATORS. Modern Video Center. 23 min. Grades 7-12.

Search for natural gas, sponsored by Pennzoil.

174. SEA VENTURE. Modern Talking Pictures. 28 min. Grades 7-12.

Offshore oil drilling presented in a romantic light by Exxon.

175. SEAPROBE. Modern Video Center. 17 min.

Search and recovery vessel capable of retrieving sunken ships from depths of several thousand feet. Sponsored by ALCOA.

## Video Recordings

OFFSHORE (80)

THE RIGHT WHALE: AN ENDANGERED SPECIES (83)

SEA TURTLES (201)

SIX FATHOMS DEEP (59)

176. SALMON STORY. Public Television Library. 1974. 27 min. $175/$68.

Life cycle of the salmon, and current research of its migration process.

# II. ELEMENTARY

## Audio Recordings

BIO-ACOUSTICS AND SHARKS (1)

HURRICANES (3)

THE ORIGIN OF CLIMATE (8)

SOUNDS OF THE SEA (15)

WATER TRANSPORTATION (239)

## Film Loops

177. ARCTIC RING SEAL. Walt Disney. 1967. 3 min. $25.

178. BOTTLENOSE DOLPHIN. Walt Disney. 1967. 4 min. $25.

179. BY SEA AND SHORE. Troll. 1970. 3 loops. 4 min. each. $64.50. $21.50 each.

Contents: Surfacing Birds; Shore Birds; Flamingoes of the World.

COASTAL PROCESSES (19)

180. COURTSHIP RITUAL OF STICKLEBACK FISH. Walt Disney. 1967. 4 min. $25.

181. CRABS. Walt Disney. 1967. 4 min. $25.

CRUSTAL EVOLUTION (22)

DEEP OCEAN SEDIMENTS (23)

182. ELEPHANT SEAL. Walt Disney. 1967. 3 min. $25.

183. ELEPHANT SEAL COLONY. Walt Disney 1972. 2 min. $25.

184. FUR SEAL. Walt Disney. 1967. 4 min. $25.

185. FUR SEALS AND THEIR YOUNG. Walt Disney. 1967. 4 min. $25.

186. GIANT FISH VERSUS JAGUAR. Walt Disney. 1967. 4 min. $25.

187. HERMIT CRABS. Walt Disney. 1967. 2 min. $25.

HOW ANIMALS MOVE UNDERWATER (24)

LANDFORMS PRODUCED BY COASTAL DEPOSITION (25)

LANDFORMS PRODUCED BY WAVE EROSION (26)

188. OCTOPUS. Walt Disney. 1967. 3 min. $25.

OCEAN BASIN TOPOGRAPHY (29)

OCEAN CURRENTS (30)



OCEANOGRAPHY (31)

189. SALMON RUN. Walt Disney. 1967. 4 min. $25.

190. SEA HORSE. Walt Disney. 1967. 2 min. $25.

191. SEA LION COLONY SURFING. Walt Disney. 1972. 3 min. $25.

192. SEASLUGS. Walt Disney. 1967. 2 min. $25.

193. UNDERSEA WORLD OF JACQUES COUSTEAU. BFA. 13 loops. $324.35. $24.95 each.

Based on TV series. Contents: Deep Sea Diving; Wonders of the Coral Jungle; Coral Reef Community; Investigating Protective Behavior; Investigating Territorial Behavior; Investigating Predatory Behavior; Investigating Shark Behavior; Shark Feeding Frenzy; Reproductive Behavior of the Turtle; Struggle for Survival; Conservation; Fishes; Giants of the Deep.

194. WALRUS COLONY. Walt Disney. 1967. 4 min. $25.

195. WALRUS SWIMMING. Walt Disney. 1967. 2 min. $25.

196. WHALES SURFACING. Walt Disney. 1967. 2 min. $25.

## Free-Loan Films

*[See also* ESTUARY: THE EDGE OF LIFE (114) *and* U.S. MERCHANT MARINE FLEET PICTURES (238).*]*

CORAL KINGDOM (43)

CORAL WONDERLAND (44)

197. EAGLE 76. U.S. Coast Guard. 1977. 10 min.

Coast Guard training ship Eagle in Operation Sail 7/4/76.

GREAT BARRIER REEF (51)

ISLAND OF TURTLES (54)

MARVELS IN MINIATURE (56)

ONE BIG OCEAN (200)

198. OPSAIL 76. U.S. Coast Guard. 1976. 11 min.

Tall ships in New York harbor 7/4/76.

## Films

199. MARSHLAND IS NOT A WASTELAND. Fenwick Productions. 1962. 14 min. $160. Rental from Pennsylvania State University, $5.40. Grades 4-12.

Produced by the National Audubon Society, the film's message is that marshland once filled in can never be returned to its natural state.

OFFSHORE (80)

200. ONE BIG OCEAN. Journal Films. 1970. 10 min. $165. Rental from Pennsylvania State University, $5.60, Syracuse University, $7. Available as captioned film for the deaf from Bureau of Education for the Handicapped. Grades 3-5.

All oceans are connected and are the source of food and other resources. Size of oceans, saltiness, and waves are demonstrated.

201. SEA TURTLES. Time-Life. 1976. 13 min. $175/$25. $125 (video). Grades 5-12. Recommended by *Science Books and Films* 3/78*, *Learning* 12/76.

The life cycle of a species of sea turtles that come out of the sea to lay their eggs on the beach. Immediately after hatching the young retreat to the sea to escape their many predators.

202. SEASHORE. Pyramid. 1971. 8 min. $150/$20. Grades 4-12. Rental from Syracuse ($8), University of California ($13).

Low-key evocation of beauty of unspoiled wilderness on west coast.

SHIPPING (88)

203. WAVES. International Film Bureau. 1977. 26 min. $365/$17.50. Grades 5-12. Recommended by *Booklist* 2/1/78, *Landers* 11-12/77.

"Nature's abstract art is depicted" as camera "lingers lovingly on the patterns and textures created by waves" (*Booklist*).

204. WHALES. Macmillan. 1977. 22 min. $270/$20. Grades 4-12. Recommended by *Landers* 11-12/77.

205. WHALES: CAN THEY BE SAVED? EBEC. 1976. 24 min. Teacher's guide. $320/$25. Grades 4-12. (From Wide World of Adventure series.) Recommended by *Previews* 11/77.

Little emphasis on endangered status of whales despite title. Footage of 1922 whaling expedition.

## Filmstrips

206. AT A SEASHORE. Learning Tree. 1976. 1 filmstrip, 1 cassette. $17. (Visiting Nature series.)

Intended to convey the experience of a walk along the shore rather than to instruct.

207. DIVING THE GREAT BARRIER REEF. Troll. 1976. 1 filmstrip, 1 cassette, 11 books, 4 duplicating masters. Teacher's guide. 34 frames, 14 min. $48. Grades 4-9. Recommended by *Booklist* 3/15/77.

Australia's Great Barrier Reef explored in a kit useable for reading or science instruction.

208. THE DRIFTING CONTINENTS. Educational Dimensions Group. 1976. 2 filmstrips, 2 cassettes. 60 frames each. $37. Grades 4-8. Recommended by Elementary School Library Collection, *Booklist* 11/1/76, *Previews* 12/76.

Plate tectonics, spreading of the sea floor and formation of mountains. Contents: Why the World Moves; Dinosaurs, Earthquakes and Volcanoes.

209. ECOLOGY AT WORK: A STUDY OF THE SEA OTTER. Prentice-Hall. 1973. 3 filmstrips, 3 cassettes or records. Teacher's guide. 64-92 frames each. $74. Grades 5-8.

Contents: The Sea Otter and Its Environment; Life Cycle and Behavior of the Sea Otter; The Sea Otter and Man.

210. EXPLORING THE OCEAN. Prentice-Hall. 1974. 6 filmstrips, 6 cassettes. Teacher's guide. 71-80 frames, 16-22 min. each. $105. Grades 5-8. Recommended by Elementary School Library Collection.

Contents: Where the Land Meets the Sea; Describing the Ocean; Life in the Open Sea; The Ocean's Challenge; An Oceanographic Field Trip; Working Oceanography.

211. EXPLORING UNDER THE SEA. Multi-Dimensional Communications. 1977. 1 filmstrip, 1 cassette. Teacher's guide. $20. Grades 4-8.

Available with Spanish narration.

INTRODUCING OCEANOGRAPHY (99)

212. LIFE CYCLES OF COMMON ANIMALS, GROUP I. Imperial Education. 1971. 4 filmstrips, 4 cassettes or records. 37-41 frames. $56 ($62 with cassettes); $16 each ($17.50 with cassette). Grades 4-9.

Contents: The Life Cycle of a Gull (Part I and II); The Life Cycle of a Salmon (Part I and II).

213. LIFE CYCLES OF COMMON ANIMALS, GROUP IV. Imperial Educational. 1973. 2 filmstrips, 2 cassettes or records. 37-38 frames each. $30 ($33 with cassettes); $16 each ($17.50 with cassette). Grades 4-9. Recommended by *Science and Children* 11-12/74.

Study of the sea lion.

LIFE IN THE SEA (100)

LIFE OF THE FISHES (61)

214. MARINE MAMMALS OF CANADA. National Film Board of Canada. 1977. 1 captioned filmstrip. $8. 44 frames. Grades 4-9.

Arctic seals and whales.

215. MARINE BIOMES. Prentice-Hall. 1972-3. 6 filmstrips, 6 cassettes or records. 65-90 frames each. Teacher's guides. $140; $50 each set of 2. Grades 4-9. Recommended by Elementary School Library Collection.

Contents: The Oceans (Planktonic, Nektonic, Benthonic Realms; Adaptations to Oceanic Environment); The Beach (Tide and Wave Action; Plant and Animal Life); The Wetlands (Salt Water; Fresh Water).

216. THE NEW OCEANS. Educational Dimensions. 1976. 4 filmstrips, 4 cassettes. 57-61 frames, 15-18 min. Teacher's guide. $82. Grades 4-7. Recommended by *Previews* 1/77, 4/77, *Booklist* 1/15/77.

"Well-developed . . . survey of oceanography . . . fact-filled narrative" (*Booklist*). Covers origin of oceans, tidal action, water cycle, oceans' importance to life, marine biology and habitats, natural resources of the ocean and their exploration.

217. THE OCEAN. BFA. 1974. 1 filmstrip, 1 cassette or record. 38 frames, 5 min. Teacher's guide. $13 ($15 with cassette). (Environment series.) Grades 1-6.

218. OCEAN LIFE. Educational Dimensions. 1976. 2 filmstrips, 2 cassettes. 50-100 frames, 8-17 min. Teacher's guide. $43. Grades 4-9. Recommended by *Previews* 2/78.

Contents: Finfish; Whales and Sharks.

219. OCEAN WAVES. Outdoor Pictures. 1 filmstrip and cassette. 51 frames. 13 min. $17.50; $29.50 (slides).

220. THE OCEANS: A KEY TO OUR FUTURE. United Learning. 1977. 5 filmstrips, 5 cassettes. 38-52 min., 9-10 min. each. Teacher's guide. $75. Grades 5-8. Recommended by *Booklist* 1/1/78, *Previews* 10/77.

Emphasis on ecologically sound human interrelationship with sea. Contents: Past, Present and Future; A Storehouse of Food; A Storehouse of Raw Material; A Storehouse of Power.

221. THE OCEANS. McGraw-Hill. 1976. 1 filmstrip, 1 cassette. Approximately 75 frames, 16 min. Teacher's guide. $12 (filmstrip), $8 (cassette). $54 (series). (Earth and University, Set 2 series.) Grades 4-7.

The other two strips in the series deal with the water cycle and the properties of water.

222. THE RESTLESS SEA. Walt Disney. 1975. 5 filmstrips, 5 cassettes or records. Teacher's guide. 49-58 frames each. $88; $21 each.

Adapted from Disney motion picture. Contents: Oceanography -- An Overview; Tides, Wind and Waves; Mr. C. Waters; Surface and Deep Ocean Currents; Life in the Sea -- An Unfolding Story.

223. SALT WATER COMMUNITIES. EMC. 1971. 3 filmstrips, 3 cassettes. 4 wall charts, duplicating masters. Teacher's guide. 81-90 frames, 11-12 min. each. $69. Grades 4-8. Recommended by Elementary School Library Collection.

Contents: The Living Ocean; The Tide Pools; Oceans Alive.

224. SEA SHORE -- DESPOLIATION AND IMBALANCE. Eyegate. 1 captioned filmstrip. $10. (Ecological Imbalance series.) Grades 5-8.

225. SEACOASTS. BFA. 1974. 1 filmstrip, 1 cassette or record. $13 ($5 with cassette). Grades 4-8.

226. SEASIDE. BFA. 1974. 1 filmstrip, 1 cassette or record. 51 frames. $13 ($15 with cassette). (Land and Man series.) Grades 4-8. Recommended by *Previews* 5/76.

Non-narrated, musical accompaniment to photographs.

227. SHARKS. National Geographic. 1977. 1 filmstrip, 1 cassette. 14 min. $18. Grades 3-8.

228. SHORE CURRENTS. Outdoor Pictures. 1 filmstrip and cassette. 51 frames, 1 min. $17.50; $29.50 (slides).

229. SHORES: THE EDGES OF THINGS. Prentice-Hall. 1975. 6 filmstrips, 6 cassettes or records. Approximately 61 frames each. Teacher's guide. $138. Grades 4-8.

Contents: Our Shores; Patterns of Rocky Shores; Inhabitants; Beaches and Their Sand; Marshes and Their Mud; Wind and Sand.

230. UNDERSEA EXPLORATION. Film Forum. 1974. 4 filmstrips, 4 cassettes. 91-106 frames, 10-12 min. each. Teacher's guide. $85. Grades 5-12. Recommended by *Previews* 4/78, Elementary School Library Collection, *Booklist* 5/1/75.

Cousteau production. Contents: Man Enters the Sea; Conquest of the Depths; Freedom Underwater; Living under the Sea.

UNDERWATER ENVIRONMENT (112)

231. THE SALTMARSH AND SEASHORE ECOSYSTEM. Troll. 1975. 2 filmstrips, 2 cassettes. 41 frames each. $22. Grades 3-7. (What Are Ecosystems series.) Recommended by *Booklist* 7/1/76, *Previews* 4/76.

232. WHERE LAND AND WATER MEET. Eyegate. 1 filmstrip, 1 cassette. $10 (filmstrip), $7 (cassette). (Nature's Wonders series.) Grades 2-4.

Photography to convey seashore experience.

## Charts, Study Prints, Photographs, Etc.

233. BY THE SEA. Berthe Amoss. Parents Magazine Press. 1969. $5.95. Grades K-3.

Picture book without words.

ESTUARY: THE EDGE OF LIFE (114) (free-loan)

234. LARGE SEA ANIMALS. SVE. 8 pictures. $11.

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235. NATURE'S COMMUNITIES: A CORAL REEF. SVE. 8 pictures. $11.

Contents: Coral Reef Panorama; School of Barber Fish; Sea Slug and Sea Fan; Starfish; Parrot Fish; Sea Anemone and Damselfish; Coral Reef at Night; Hydrocoral and Sponges.

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236. SMALL ANIMALS OF SEA AND SHORE. SVE. 8 pictures. $11.

Contents: Sea Anemone Eating Starfish; Sea Horse; Moray Eel; Jellyfish; Squid; Rock Crab; Sponge; Stingray.

237. MARINE LIFE. Audio Visual Enterprises. 12 study prints. Color. 11x14". $15. Recommended by Elementary School Library Collection.

Contents: Mussels, Periwinkles, Chitons, Shore Crabs, Brittle Stars, Sculpin, Opaleye, Sea Hare, Seashore Tidepools, Sea Urchins, Hudsonian Curlew, Sanderling, Sea Anemone, Sea Gulls, Knobby Sea Stars, and Purple Sea Stars.

238. U.S. MERCHANT FLEET PICTURES. U.S. Maritime Administration. 15 pictures. Free.

239. WATER TRANSPORTATION. Eyegate. 10 study charts 22x17". $11. With cassette, $17.90.

Contents: Log and Raft; Ancient Ship; Viking Ship; Santa Maria; Clipper Ship; Clermong; Great Eastern; Freighter; Modern Passenger Liner; The Future of Ships.

## Slides

BIRDS OF SALT WATER ENVIRONMENTS (137).

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240. SEASHORE INHABITANTS. Ward's. 20 slides. $20.

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## Transparencies

241. FISH -- ANIMALS WITH BACKBONES. Inquiry. 4 transparencies, 8 overlays. Teacher's guide. $27. Grades 3-8.

Contents: Anatomy; Life Functions; Food Chains; Reproduction.

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## Video Recordings

SEA TURTLES (201)

242. A SEASHORE COMMUNITY. Agency for Instructional Television. 1976. 15 min. $110. (Why? series.) Grades 1-6.

One of 43 programs in elementary science series featuring inquiry approach.

# III. PROFESSIONAL

*[Many titles listed in this section are also appropriate for use by high school students.]*

## Books and Periodicals

243. ATLAS OF THE OCEANS. Rand McNally. 1977. 208 pp. $29.95.

244. THE BOTTOM OF THE SEA AND BEYOND. Carl Heintze. Thomas Nelson. 1975. 144 pp. $5.95.

245. CONTINENTAL DRIFT AND PLATE TECTONICS. William Glen. Merrill. 1975. 188 pp. $4.95.

246. CONTINENTS IN MOTION: THE NEW EARTH DEBATE. Walter Sullivan. McGraw-Hill. 1974. 399 pp. $19.75.

247. HANDBOOK OF MARINE SCIENCE. CRC Press. 1974. 2 vol. $80.

248. INTRODUCTORY OCEANOGRAPHY. Harold V. Thurman. Merrill. 1975. $16.95.

249. MARINE AND ENVIRONMENTAL STUDIES FIELD MANUAL. Superintendent of Schools, Cranston, Rhode Island. 1973. 139 pp. Free. Grades 10-12.

Lab manual for field study course. Contents: Beaches; Nekton; Plankton; Arthropods; Salt Marshes; Tidal Pools; Pollution; Mollusks; Marine Worms; Navigation; Plants; Sponges and Coelenterates; Political and Social Investigations; Tides and Currents; Economic Investigations; Marine Geology; Spring Herring Census; Echinocerms; Supplemental Activities.

250. OCEANOGRAPHY. Walter Thurber, et al. Allyn & Bacon. 1976. $3.08. Grades 7-12.

251. OCEANOGRAPHY: CONTEMPORARY READINGS IN OCEAN SCIENCES. R. Gordon Pirie. Oxford. 1977. 2nd edition. 424 pp. $6 paper.

252. OCEANOGRAPHY FACT BOOK. Robert E. Boyer. Hubbard. 1974. 48 pp. $4.95.

253. OCEANS. Karl K. Turekian. Prentice-Hall. 1976. 149 pp. $5.95 paper.

254. OCEANS: OUR CONTINUING FRONTIER; A FILMOGRAPHY. Nadine Covart. Educational Film Library Association. 1976. 11 pp. $2.50.

Selected list of approximately 90 films to accompany a college level course.

255. OCEANUS (qu). Woods Hole Oceanographic Institution. $10/year. Some back issues available at $3 each.

Each issue covers one topic. Contents (1977-8): Sound in the Sea; Oil in Coastal Waters; The Deep Sea; Marine Mammals; High-Level Nuclear Wastes in the Seabed?

256. PRINCIPLES OF OCEANOGRAPHY. Richard Davis Jr. 2nd edition. Addison-Wesley. 1977. $11.96. Grades 10-12.

257. SEA GRANT '70s. Monthly. Texas A&M University Sea Grant Program. Illus. Free.

Two to three feature articles per issue on marine organisms, fishing and other commercial uses of the sea, oceanic studies, etc. Announcements of sea grant publications.

258. A UNION LIST OF OCEANOGRAPHIC EXPEDITIONS: INCLUDING RESULTS OF SOME MAJOR CRUISE REPORTS. Texas A&M University, Center for Marine Resources, College Station, Texas 77843. 1976. 138 pp. $5.

259. THE WAY THE EARTH WORKS: AN INTRODUCTION TO THE NEW GLOBAL GEOLOGY AND ITS REVOLUTIONARY DEVELOPMENT. Peter p. Wyllie. Wiley. 1976. 296 pp. $7.95 paper.

259a. AUDIO-VISUAL AIDS AND ART FOR MARINE ENVIRONMENT STUDIES. 2nd edition. Project COAST. 1978. 89 pp. $2.

Note listings of approximately 180 art prints and slides, in addition to approximately 250 films.

259b. A LIST OF BOOKS ON THE MARINE ENVIRONMENT FOR CHILDREN AND YOUNG PEOPLE. 2nd edition. Project COAST. 1978. 62 pp. $2.

259c. A CATALOG OF CURRICULUM MATERIALS FOR MARINE ENVIRONMENT STUDIES. Project COAST. 38 pp. $2.

259d. AN ANNOTATED BIBLIOGRAPHY OF PERIODICAL SOURCES FOR

# UNITED STATES CODE ANNOTATED

## Title 33

## Navigation and Navigable Waters

### SUBCHAPTER II—SEA GRANT COLLEGES

**§ 1121. Congressional declaration of purpose**

**The Congress hereby finds and declares—**

**(a) that marine resources, including animal and vegetable life and mineral wealth, constitute a far-reaching and largely untapped asset of immense potential significance to the United States; and**

**(b) that it is in the national interest of the United States to develop the skilled manpower, including scientists, engineers, and technicians, and the facilities and equipment necessary for the exploitation of these resources; and**

**(c) that acquaculture, as with agriculture on land, and the gainful use of marine resources can substantially benefit the United States, and ultimately the people of the world, by providing greater economic opportunities, including expanded employment and commerce; the enjoyment and use of our marine resources; new sources of food; and new means for the development of marine resources; and**

**(d) that Federal support toward the establishment, development, and operation of programs by sea grant colleges and Federal support of other sea grant programs designed to achieve the gainful use of marine resources, offer the best means of promoting programs toward the goals set forth in clauses (a), (b), and (c), and should be undertaken by the Federal Government; and**

**(e) that in view of the importance of achieving the earliest possible institution of significant national activities related to the development of marine resources, it is the purpose of this subchapter to provide for the establishment of a program of sea grant colleges and education, training, and research in the fields of marine science, engineering, and related disciplines.**

Pub.L. 89-454, Title II, § 202, as added Pub.L. 89-688, § 1, Oct. 15, 1966, 80 Stat. 998.

**Historical Note**

**Short Title.** Section 201 of Pub.L. 89-454, as added by section 1 of Pub.L. 89-688, provided that: "This title [enacting this subchapter] may be cited as the 'National Sea Grant College and Program Act of 1966'."

**Legislative History.** For legislative history and purpose of Pub.L. 89-688, see 1966 U.S.Code Cong. and Adm.News, p. 3309.

MARINE ENVIRONMENT STUDIES, NEWSLETTERS, BULLETINS, JOURNALS, AND MAGAZINES. Project COAST. 21 pp. $1.

## Government Publications

*[Publications carrying an S/N number may be ordered prepaid from the U.S. Superintendent of Documents. Some may be available free from issuing agencies or through members of Congress. Request free publications on official letterhead.]*

From Maine Department of Marine Resources:

260. FISHERIES EDUCATION SERIES. Nos. 1-10. Free.

260a. LIST OF PUBLICATIONS. 1977. 29 pp. Free.

From National Advisory Committee on Oceans and Atmosphere:

261. INTERNATIONAL DECADE OF OCEAN EXPLORATION: A MID-TERM REVIEW. 1975. 52 pp. 75¢. S/N 003-017-00337-0.

From National Science Foundation:

262. DEEP SEA SEARCHES. 1975. 28 pp. $1.10. S/N 038-000-00248-1.

From U.S. Congress, House Committee on Science and Technology:

263. ENERGY FROM THE OCEAN. 1978. 433 pp. $4.25. S/N 052-070-04495-1.

Potential energy sources include tides, currents, waves, wind, bioconversion as well as oil, gas and other mineral resources.

From U.S. Congress, Senate Commerce, Science and Transportation Committee:

264. THE ECONOMIC VALUE OF OCEAN RESOURCES TO THE UNITED STATES. 1974. 124 pp. $1.50 S/N 052-070-02663-4.

265. EFFECTS OF MAN'S ACTIVITIES ON THE MARINE ENVIRONMENT. 1975. 144 pp. $1.55. S/N 052-070-02866-1.

From U.S. Environmental Protection Agency:

266. INTERACTION BETWEEN MARINE ORGANISMS AND OIL POLLUTION. 1973. 97 pp. Illus. $1.40. S/N 055-001-00613-6.

From U.S. Geological Survey:

267. THE A-B-C OF DESALTING. 1977. 30 pp. $1.90. S/N 024-001-00836-3.

268. MARINE GEOLOGY: RESEARCH BENEATH THE SEA. 1977. 14 pp. 35¢. S/N 024-001-00311-2.

269. WHY IS THE OCEAN SALTY? 1977. 15 pp. 35¢. S/N 024-001-02194-3.

From U.S. Bureau of Labor Statistics:

270. EMPLOYMENT OUTLOOK FOR ENVIRONMENTAL SCIENTISTS: GEOLOGISTS, GEOPHYSICISTS, METEOROLOGISTS, AND OCEANOGRAPHERS. 1976. 15 pp. 35¢. S/N 029-001-01691-3.

From U.S. Maritime Administration:

271. INFORMATION REGARDING EMPLOYMENT IN THE U.S. MERCHANT MARINE. 1976. 15 pp. Free.

272. THE U.S. MERCHANT MARINE -- A BRIEF HISTORY. 1976. 8 pp. Free.

From U.S. National Oceanic and Atmospheric Administration (NOAA):

273. GULFSTREAM. Monthly. Superintendent of Documents. $4.95/year.

274. NOAA AQUACULTURE PLAN. 1977. 41 pp. $1.60. S/N 003-020-00136-0.

275. NOAA DIVING MANUAL. 1975. 448 pp. $8.55. S/N 003-017-00283-7.

Addressed to scientist-divers, but of interest to sport divers also.

276. THE NATIONAL SEA GRANT PROGRAM: A REVIEW. 1976. 78 pp. $1.10. S/N 052-003-00270-1.

From U.S. National Ocean Survey Physical Science Services Branch:

277. OCEANOGRAPHY PACKET. Free.

Contents: Nautical Chart Catalogs; Our Restless Tides; Tidal Currents; America's Islands; The Coastline of the United States; NOS Bathymetric and Geophysical Map Index; NOAA, The Marine Environment and Ocean Life; Selected List of References on the Ocean and Oceanography; List of Institutions Offering Degrees in Oceanography; Possible Sources of Wreck Information; Others.

278. SCIENCE PACKET. Free.

Contents: Mapping Our New Sea Frontier; The Gulf Stream; Ocean Survey Ship; List of Free and Inexpensive Educational Materials; National Ocean Survey Publications Can Make You a Better Fisherman; Several Publications as in OCEANOGRAPHY PACKET (277); Others.

From U.S. Naval Oceanographic Office:

279. AN OCEANOGRAPHIC CURRICULUM FOR HIGH SCHOOLS. 1971. 30 pp. 85¢. S/N 008-042-00002-1.

From U.S. Superintendent of Documents:

280. FEDERAL OCEAN PROGRAM, ANNUAL REPORT OF THE PRESIDENT TO THE CONGRESS ON THE NATION'S EFFORTS TO COMPREHEND, CONSERVE, AND USE THE SEA. 1977. 107 pp. Illus. $1.45. S/N 040-000-00377-1.

281. NATIONAL OCEAN SURVEY PUBLICATIONS (SB 260). 5 pp. Free.

282. OCEANOGRAPHY (SB 032). 10 pp. Free.

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1975. 1 p. 94-1:Pub. Law 69 022-003-91007-7 $ .35

___Apparatus for Testing Oceanographic Resistance Thermometers.
1976 51 p. il. C 13.46:894 003-003-01570-9 1.45

___The Argo Merchant Oil Spill, March 1977: NOAA Preliminary Report.
1977. 100 p. C 55.2:Ar 3/2 003-023-00038-9 9.75

___Argo Merchant Oil Spill Summary Fact Sheet.
1977. 16 p. C 55.2:Ar 3 003-023-00040-1 .90

___BOMEX Period III Upper Ocean Soundings.
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___Caribbean Zooplankton. *This report concerns the results of eight cruises from 1966 to 1969 on which hydrographic data were collected along with plankton samples. In analyzing the plankton many other species were identified and counted. Many unusual organisms were encountered also, and are discussed, but mainly the information centers around the relative abundance and distribution of known species of important haloplanktonic groups.*
1976. 720 p. il. Clothbound.
D 210.2:C 19 008-051-0006606 13.00

___Collected Reprints, Wave Propagation Laboratory, 1972-73.
1975. 638 p. C 55.612/2:972-73 003-020-00092-4 6.75

___Computer Programs in Marine Science.
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___Whales, Dolphins, and Porpoises of the Western North Atlantic, A Guide to Their Identification.
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# MEDIA MONITOR

THE TIMELY GUIDE TO LEARNING RESOURCES

*(continued from page 1)*

noted. Prices are subject to change and should be considered approximations only, but are in most cases those shown in 1978-79 catalogs. Only pricing and other factual data are taken from vendor copy.

MEDIA MONITOR's selection criteria seek out materials that are:

1. Up to date. We mention few titles known to be over five years old unless the topic is not covered in a more recent release. Filmstrips dating back to the early 1960s and even 1950s are still being offered for sale in vendor catalogs. Unfortunately, dates cannot always be determined, particularly for maps, charts, study prints, and the like,

2. Authoritative. Except for recent releases, we feature films and filmstrips that are recommended by professional journals and independent reviewers, supplying the date of the review and occasional quotes. Other formats are not widely reviewed, however, and are selected on the basis of topics covered.

3. Cost-effective. We are less selective for low-priced media than for high-priced ones. We call to our readers' attention filmstrip and film loop adaptations of more costly Cousteau and Disney films; slide sets and captioned filmstrips that cover the same topics as sound filmstrips; 8mm film loops on the same topics as 16mm films; and free-loan films on many of these same topics.

4. Unadvertised. We make a special effort to list hard-to-find items.

This guide *excludes* materials such as microscopic slides, saltwater aquaria, live specimens and other laboratory and demonstration materials. A relatively few science supply houses are the sources for these and comparison shopping among their offerings is not difficult. Also omitted from consideration were films over 30 minutes in length, materials known to be out of print, and filmstrip series that include a filmstrip on oceans where that title cannot be separately purchased. Suitable media fitting excluded categories may, of course, be found in your film library or school.

Listing in MEDIA MONITOR does not imply recommendation.

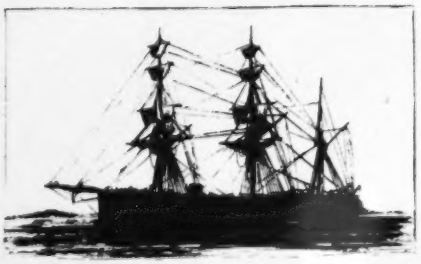
We hope THE OCEANS: NEW FRONTIER will help you to identify media geared to your teaching objectives, your students' needs, and your school's budget and facilities.

ifm informedia

Mary Robinson Sive *editor*

John Clarke *production*

MEDIA MONITOR is published four times each school year. Subscription price $10 prepaid, $11.50 if billed, includes permission to duplicate. Single issues, $2.50 prepaid. Make checks payable to INFORMEDIA, Post Office Box 1020, Pearl River, New York 10965.



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